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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/761,033	01/16/2001	Yang Gao	10508/998RSS366	4236

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EXAMINER

SKED, MATTHEW J

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 10/14/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/761,033	Applicant(s) GAO, YANG	
	Examiner Matthew J. Sked	Art Unit 2655	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 28, 29, 31-35, 38, 39 and 41-45 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 28, 29, 31, 32, 38, 39, 41 and 42 is/are rejected.
- 7) ☒ Claim(s) 33-35 and 43-45 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Response to Amendment

1. Applicant's arguments with respect to claims 28, 29, 31-35, 38, 39 and 41-45 have been considered but are moot in view of the new ground(s) of rejection, necessitated by amendment.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 28, 29, 31, 32, 38, 39, 41 and 42 are rejected under 35 U.S.C. 103(a) as being unpatentable over Funaki (U.S. Pat. 6,006,177) in view of Serizawa et al. (U.S. Pat. 5,687,284).

As per claims 28 and 38, Funaki teaches a method and encoder for encoding a speech signal, comprising:

processing said speech signal to generate a plurality of frames, wherein each of said plurality of frames includes a plurality of subframes (divides frames into subframes, col. 1, lines 30-35);

coding a previous subframe of said plurality of subframes using CELP to generate a previous excitation signal (long term correlation (pitch parameter) is extracted from past excitation signals, col. 1, lines 27-39); and

applying short term enhancement using said previous excitation signal to enhance a current excitation signal for a current subframe (speech signal is long-term predicted with the pitch parameter, col. 1, lines 27-56).

Funaki does not specifically teach the current excitation signal is constructed using an excitation pattern accounts for long-term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag.

Serizawa teaches an encoder wherein the excitation signal is constructed using an excitation pattern accounting for long-term correlation in which a true pitch lag is shorter than a subframe size (pitch delay is shorter than the subframe length, col. 8, lines 5-16), while detected pitch lag is substantially greater than the true pitch lag (pitch delay is several times the pitch period, col. 3, lines 41-49).

It would have been obvious to one of ordinary skill in the art at the time of invention to modify the system of Funaki to construct the current excitation signal using an excitation pattern accounts for long-term correlation in which a true pitch lag is shorter than a subframe size, while detected pitch lag is substantially greater than the true pitch lag as taught by Serizawa because this configuration would give improved parameter estimation and ensure that random noise spikes do not throw off the pitch lag estimate.

4. As per claims 29 and 39, Funaki teaches the short term enhancement is achieved by using several pulses from said previous excitation signal to generate one or more short term enhancement pulses based on short term correlation (speech signal is

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long-term predicted hence it creates pitch pulses in the excitation signal corresponding to the pulses found in the previous excitations, col. 1, lines 27-56).

5. As per claims 31 and 41, Funaki teaches weighting the previous excitation signal by a current weighting filter to estimate correlation peaks at a distance (extracts long-term correlation which would inherently be found from a filter, col. 1, lines 27-56).

6. As per claims 32 and 42, Funaki teaches determining less than five peaks and gains per each subframe from said previous excitation signal (determines a pitch parameter which is the correlation of samples about a peak and a gain for each subframe, col. 1, lines 27-65).

Allowable Subject Matter

7. Claims 33-35 and 43-45 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

8. The following is a statement of reasons for the indication of allowable subject matter: Claims 33 and 43 recite the current excitation signal is constructed by a function of a gain, the distance to the peak, a coefficient and impulse response. None of the prior art on record teaches calculating the current excitation using this function. It would not have been obvious to one of ordinary skill in the art to modify the system of Funaki and Serizawa to arrive at the Applicant's invention.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ozawa (U.S. Pat. 6,009,388), Honkanen et al. (U.S. Pat. 5,893,060) and Schroeder et al. ("Code-Excited Linear Prediction: High Quality Speech at Very Low Bit Rates") teach enhancing a current excitation signal through the use of previous excitation signals.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Matthew J. Sked whose telephone number is (571) 272-7627. The examiner can normally be reached on Mon-Fri (8:00 am - 4:30 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wayne Young can be reached on 571-272-7582. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



W. R. YOUNG
PRIMARY EXAMINER

MS
10/03/05